Review Article

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Foetal Alcohol Syndrome Disorder in South Africa: Understanding the Enablers of Alcohol Consumption During Pregnancy

Oluwatobi J. Alabi[1*]
Mivuyo Jacob[2]

AFFILIATIONS

[1]Department of Sociology, Faculty of Humanities, University of Johannesburg, Johannesburg, South Africa.
[2]Society and Social Change Cluster, University of KwaZulu Natal, Durban, South Africa.

CORRESPONDENCE

Email: dalabi@uj.ac.za*

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Abstract: Foetal alcohol spectrum disorder (FASD) remains one of the leading causes of non-genetic intellectual and developmental disabilities globally. Although there is no reliable estimate of the national burden of FASD in South Africa, a recent study reported a prevalence of 310 per 1,000 live births in a community within the Western Cape Province. This study reviews existing literature on the factors that enable and influence alcohol consumption among pregnant women in South Africa. A scoping review was conducted in August 2024. Using PubMed, ScienceDirect, JSTOR, and EBSCOHost, a Boolean search was conducted focussing solely on studies related to alcohol consumption among pregnant women or FASD, carried out in South Africa and published in English between 2020 and 2024. Seventeen studies were identified as relevant to the phenomenon. Some of the key enablers identified include unplanned pregnancies, intimate partner violence, mental health challenges, and socioeconomic hardship. Due to systemic knowledge gaps and limited resources, interventions are frequently delayed, exacerbating the health and socioeconomic outcomes associated with FASD. Effective mitigation strategies require culturally sensitive public health campaigns, enhanced early diagnosis in rural areas, and trauma-informed, non-judgmental healthcare practices.

Keywords: Maternal alcohol consumption, alcohol abuse, unplanned pregnancies, intimate partner violence, mental health challenges, socioeconomic hardship.

1. Introduction

Foetal Alcohol Spectrum Disorder (FASD) is among the leading causes of non-genetic intellectual and developmental disabilities globally (Adebiyi & Mukumbang, 2021). It is a conceptual spectrum used by clinicians to understand and diagnose the adverse effects of prenatal alcohol use (May et al., 2022). Harding et al. (2019:3) recommend that policymakers and service providers adopt the following definition when writing FASD policy or addressing services for persons affected by FASD:

> Fetal Alcohol Spectrum Disorder (FASD) is a diagnostic term used to describe the impacts on the brain and body of individuals prenatally exposed to alcohol. FASD is a lifelong disability. Individuals with FASD will experience some degree of challenges in their daily living and need support with motor skills, physical health, learning, memory, attention, communication, emotional regulation, and social skills to reach their full potential. Each individual with FASD is unique and has areas of both strengths and challenges.

Globally, FASD affects over 1% of the population, a prevalence rate surpassing that of other well-known developmental disorders such as autism and Down syndrome (Popova et al., 2023). There has been a significant increase in international research and policy initiatives related to FASD due to its wide prevalence, especially in regions such as Croatia, Ireland, and Italy (Popova et al., 2023).

However, contrastingly low rates in countries like Qatar and Saudi Arabia, attributed to cultural and legal restrictions on alcohol consumption, suggest that broader sociocultural contexts play a crucial role in shaping drinking behaviours (Popova et al., 2023). The persistence of FASD rates in South Africa indicates the need for a nuanced investigation of the socioeconomic and cultural factors that drive alcohol consumption during pregnancy.

While there is no reliable estimate of the national burden of FASD in South Africa, May et al. (2022) report a prevalence of 310 per 1,000 live births in communities within the Western Cape Province. FASD presents a pressing and complex public health issue in South Africa (Louw et al., 2024; De Jong et al., 2021). While substantial research highlights the negative developmental, neurological, and social impacts of prenatal alcohol exposure, there is limited investigation into the systemic and situational factors that enable alcohol consumption among pregnant women in South African communities.

FASD is associated with systemic vulnerabilities such as socioeconomic pressures, intimate partner violence (IPV), low health literacy, and inadequate mental health resources (Flannigan et al., 2022; Adebiyi & Mukumbang, 2021), which collectively enable women to drink alcohol while pregnant. These factors are compounded by high rates of unplanned pregnancies, social stigmatization, and a lack of accessible support services, particularly for women in rural communities. Additionally, South Africa's historical socioeconomic landscape, marked by enduring inequalities and social fragmentation, has contributed to entrenched drinking cultures in certain communities (Macleod et al., 2021). This study explores the complex interplay of social, economic, and cultural factors that enable alcohol consumption among pregnant women in South Africa. Specifically, the study seeks to answer the following question: what are the factors enabling alcohol consumption during pregnancy in South Africa?

2. Methods

As outlined by Arksey and O'Malley (2005), this scoping review was conceptualised and implemented in five stages: 1) identification of the research question, 2) identification of relevant studies, 3) study selection, 4) charting, collating, and summarising data, and 5) reporting results.

2.1 Identifying the research question

As part of this step, Arksey and O'Malley (2005) suggest starting with large definitions of study population, intervention, and context to ensure comprehensive coverage of the search process, and then setting parameters based on the scope and volume of references gathered. Accordingly, the research question for this study is "*what are the factors enabling alcohol consumption during pregnancy in South Africa?*" The keywords for this study are shown in Table 1.

Table 1: *Keywords for search operation*

	Concept	**Search operation**
#1	FASD and South Africa	"Foetal Alcohol Syndrome Disorder" OR "FASD" OR "Alcohol consumption during pregnancy" OR "Alcohol-related birth defects" OR "Alcohol abuse and pregnancy outcomes" AND "South Africa"

2.2 Identification of relevant studies

A Boolean search was conducted on PubMed, Science Direct, JSTOR, and EBSCOHost. All articles published in English and relevant to the phenomenon from 2020 to 2024 (a five-year time frame) were included in the literature search. The literature search for this review consisted of peer-reviewed articles.

2.3 Study selection criteria

The selection of studies was first conducted in September 2023 and updated in August 2024. To capture the most recent information on the topic under investigation, a five-year period was established (2020-2024). Initially, a scoping literature search strategy was piloted to determine the relevance of selected databases, the scope of literature to be covered, and the relevant key terms to be used during the literature search.

During the actual study, all studies identified in the different databases were analysed. After the selection process, duplicates and studies that did not address the research question were excluded. A systematic screening of titles from the selected databases was performed by the reviewer. Based on the inclusion and exclusion criteria, a final list of all relevant titles was generated and shared for further screening and evaluation by various authors.

The inclusion and exclusion criteria were developed based on the research question to ensure that appropriate studies could be identified and selected. Studies published in English that were relevant to the phenomenon, as well as studies focusing on South Africa, were used as inclusion criteria in the search for literature. Studies that were not published in English, did not focus on South Africa, or were non-relevant to the phenomenon were excluded from the review. Furthermore, full-text articles were screened and stored for charting after the abstract screening was completed. A PRISMA diagram was used to summarise the process of selecting studies for inclusion in the review.In addition to the specific South African focus, the discussion in this article is informed by other studies that have been cited in relation to the topic.

2.4 Data charting

Data synthesis and interpretation employed a narrative or descriptive approach. The data were charted on a spreadsheet with the following headings: author(s), year of publication, title of study, research aim, drivers of alcohol consumption during pregnancy, effects of alcohol consumption during pregnancy, geographical setting, study approach, study findings, and conclusions and recommendations. By following this process, all relevant information extracted from the selected articles was synthesised and interpreted accordingly.

2.5 Collating, summarising, and reporting the results

As indicated by Arksey and O'Malley (2005), the summary and reporting of results in a scoping review, rather than following a normative thematic framework, should use these themes to guide the narrative account of existing literature. In this study, detailed thematic discussions were provided about the various themes emanating from the data. The PRISMA framework (Figure 1) was used to report the number of studies identified and selected across various stages for inclusion in the scoping review. The process included data collection, data presentation, and result presentation. The authors conducted a thematic analysis, and all themes were cross-examined to determine their relationship to the research question.

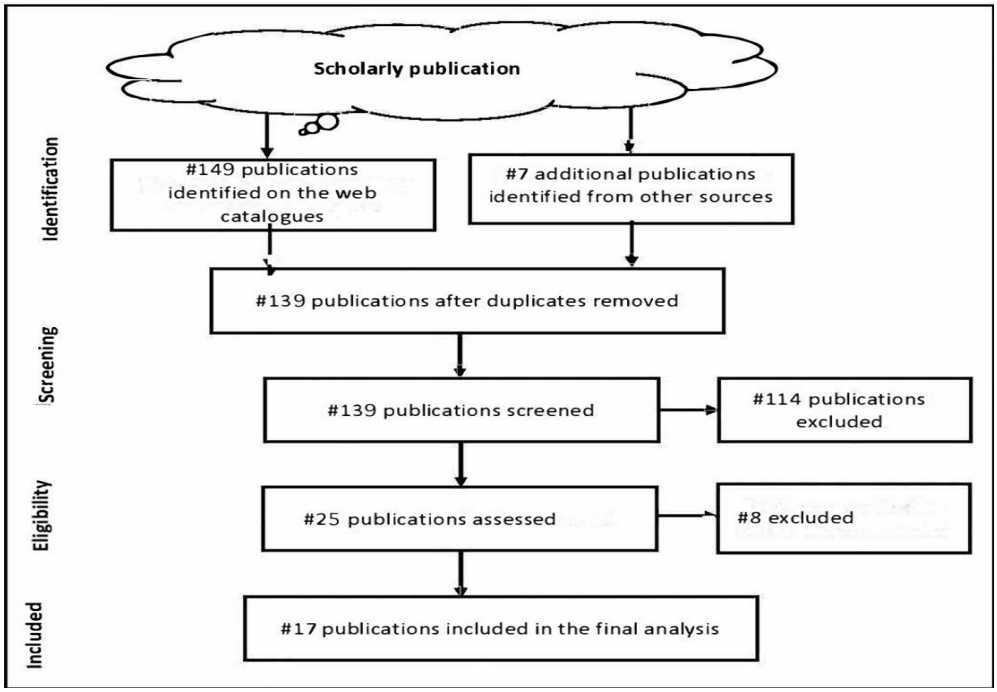

Figure 1: *PRISMA Flowchart for search process*

3. Presentation of Results

The factors that enable drinking during pregnancy in South Africa are rooted in structural inequalities and societal norms that significantly influence maternal behaviours. It is important to understand these enablers through an intersectional approach, as this provides useful insight into how systemic issues and individual experiences interrelate, further reinforcing behaviours that compromise maternal and foetal health. The below-reviewed articles provide more information.

Table 2: *Reviewed articles*

Authors	Year	Enablers of alcohol consumption during pregnancy	Effects
Wynn et al.	2020	Prenatal alcohol exposure; low maternal socioeconomic status.	Growth retardation, cognitive and behavioural impairments, economic burdens.
Elliott et al.	2020	Prenatal alcohol and cigarette exposure.	Increased risk of Sudden Infant Death Syndrome (SIDS).
Olivier et al.	2020	Prenatal alcohol exposure and associated stigma.	Social challenges, learning disabilities, and stigma impact healthcare access.
May et al.	2021	Alcohol consumption throughout pregnancy; low maternal SES.	Cognitive/behavioural deficits, high prevalence of FASD in children.
Louw et al.	2021	Prenatal alcohol exposure.	Deficiencies in executive function, cognitive delays.

Washio et al.	2021	Prenatal alcohol use; IPV and HIV co-occurrence.	Low birth weight, miscarriage, FASD-related disorders.
Macleod et al.	2021	Alcohol consumption due to IPV, youth drinking culture, and household norms.	High FASD rates and associated health risks.
De Jong et al.	2021	Social determinants: unplanned pregnancies, violence, and mental health.	Developmental and health issues in children; social stigma.
Adebiyi et al.	2021	Socioeconomic conditions, education level, and historical factors.	Intellectual disabilities, legal issues, developmental delays.
Drotsky et al.	2021	High rates of binge drinking in the Northern Cape.	Developmental disabilities impacting daily activities.
Hasken et al.	2021	Prenatal alcohol exposure, rural settings, maternal nutrition.	Low birth weight, growth suppression, neurobehavioral issues.
Rawoot et al.	2022	Social pressures, peer influence, and relationship stressors.	Neurodevelopmental and behavioural impairments.
Adebiyi and Mukumbang	2022	Maternal alcohol consumption, exacerbated during lockdowns.	Cognitive impairments and long-term health/social costs.
Jordan et al.	2023	Poverty, unemployment, entrenched drinking culture.	High FASD rates, significant economic burden.
Kalberg et al.	2023	Maternal alcohol exposure, lack of early intervention.	Delayed communication, motor skills, academic struggles.
Parker et al.	2024	Childhood trauma linked to higher alcohol use during pregnancy.	FASD perpetuates cycles of poverty and disadvantage.
Carter et al.	2024	Heavy drinking in pregnant women; genetic predispositions.	Physical and cognitive deficits, especially in high African ancestry groups.

The following discussion categorises the factors influencing alcohol consumption during pregnancy into two main categories: social enablers and socioeconomic enablers. Each of these themes is further explored through the identification and analysis of relevant sub-themes.

3.1 Social enablers of alcohol consumption during pregnancy

The social enablers, according to the data, are unplanned pregnancy, household dynamics and social pressures, intimate partner violence and alcohol use, mental health challenges, and social stigma and co-occurring risk behaviours.

3.1.1 Unplanned pregnancy, household dynamics and social pressures

There is a close relationship between unplanned pregnancies and maternal alcohol consumption during pregnancy, particularly when pregnancy is accompanied by financial, relationship, or mental health challenges. De Jong et al. (2021) report that unplanned pregnancies often lead to an increase in alcohol consumption among women, usually because they feel unprepared for motherhood or

lack adequate support. Further, Macleod et al. (2021) observe that household norms influence both youth drinking cultures and behaviours that predispose women to alcohol abuse. The normalisation of alcohol within household settings creates an environment where maternal consumption becomes part of a broader pattern of culturally sanctioned behaviour. Such environments make cessation efforts more challenging.

Furthermore, as a form of social integration or emotional escape, women may seek substance use as a way of adhering to certain relational or social norms, especially where societal expectations and individual resources conflict. Rawoot et al. (2022) emphasise that social networks reinforce substance use as a bonding activity, and pregnant women are particularly vulnerable to pressures that may discourage cessation due to fear of social isolation or relationship breakdowns. In this context, social support structures that might otherwise offer resilience become catalysts for substance use, weakening the support systems crucial for maternal health.

3.1.2 *Intimate partner violence and alcohol use*

IPV is a critical enabler of alcohol consumption during pregnancy. It acts as a mechanism of control and stress, driving affected women towards alcohol as a coping strategy. De Jong et al. (2021) argue that IPV exacerbates maternal alcohol use by fostering environments of fear and instability. Washio et al. (2021) further suggest a dual risk, whereby IPV and HIV co-occur, exacerbating vulnerability and increasing the likelihood of alcohol use during pregnancy as women seek ways to manage complex, intertwined health risks and emotional trauma. The relationship between IPV and alcohol consumption reflects a broader social tolerance of violence and gender inequality, which normalises stress responses that encourage harmful coping mechanisms. According to Macleod et al. (2021), youth drinking culture and household norms around substance use amplify these risks in households where IPV is prevalent. Consequently, IPV not only contributes to immediate stress-induced alcohol consumption but also perpetuates a cycle of normalised, intergenerational alcohol consumption.

3.1.3 *Mental health challenges*

A number of mental health conditions, including anxiety and depression, can contribute to alcohol consumption during pregnancy. As Parker et al. (2024) point out, childhood trauma is a significant predictor of alcohol use in adulthood, including during pregnancy, as unresolved trauma leads to maladaptive coping mechanisms. Women with mental health struggles may turn to alcohol as a self-medication strategy to achieve immediate relief from psychological stressors compounded by pregnancy and environmental pressures. For example, during COVID-19, women faced further isolation as they dealt with economic pressures and had limited access to critical healthcare services. As reported by Adebiyi and Mukumbang (2022), the pandemic exacerbated existing vulnerabilities, particularly for women with limited access to mental health support or social networks.

3.1.4 Social stigma and co-occurring risk behaviours

The social stigma associated with alcohol consumption during pregnancy has a complex effect, as it discourages open discussions about alcohol use, limiting women's willingness to seek assistance or disclose their drinking habits (Olivier et al., 2020). The fear of judgement or criticism may lead women to conceal their alcohol consumption, reducing the opportunity for healthcare providers to offer guidance or intervention. Furthermore, Elliott et al. (2020) note that stigma often intersects with other risk behaviours, including smoking cigarettes. The combined use of smoking and drinking as stress relief behaviours poses a compounded risk for both mother and foetus.

3.2 Socioeconomic enablers of alcohol consumption during pregnancy

FASD is a growing concern in South Africa, particularly in economically disadvantaged areas. Petersen-Williams et al. (2023) report that maternal alcohol consumption during pregnancy is

especially prevalent in these communities, where there are often insufficient resources for early intervention and prevention of FASD. The lack of adequate public health infrastructure, along with limited access to healthcare services that address alcohol consumption reduction, contributes significantly to the high rate of prenatal alcohol exposure.

3.2.2 Maternal education and health literacy

According to Jansen et al. (2022), the tendency for women with lower educational levels to consume alcohol during pregnancy is linked to a lack of health literacy and restricted access to health information. In their study of a rural township in Gqeberha, Eastern Cape, Jansen et al. (2022) concluded that, although the results indicated respondents were aware of the negative effects of alcohol during pregnancy, most participants were unaware of the specific effects of prenatal alcohol consumption. This lack of awareness, combined with the limited availability of antenatal education, suggests that knowledge gaps play a significant role in risky behaviours, such as alcohol consumption during pregnancy. May et al. (2021) emphasise that addressing these education gaps is essential for mitigating alcohol-related risks during pregnancy.

3.2.2 Income levels, poverty, and unemployment

Women from lower socioeconomic backgrounds may use alcohol as a temporary coping mechanism to deal with economic hardships (Wynn et al., 2020; May et al., 2021). Due to limited healthcare resources in economically disadvantaged communities, supportive interventions and education may not be available, which (re)produces patterns of risky behaviours. The emphasis on survival in low-income areas means that preventive healthcare often takes a back seat, reinforcing a cycle of inadequate maternal and child health. Moreover, unemployment in South Africa exacerbates these problems, as women without a stable income or employment may experience additional stresses that lead to increased alcohol use as a coping strategy. As Jordan et al. (2023) argued, poverty, unemployment, and increased alcohol consumption are all linked, and broader socioeconomic interventions are required to address these systemic factors.

3.3 Effects of FASD

3.3.1 Impact on physical health

A wide range of physical and neurodevelopmental impairments are associated with FASD, including distinctive facial characteristics, especially during the first trimester of pregnancy (Suttie, 2023). Wynn et al. (2020) reported that FASD negatively impacts cognitive and motor skills. This makes it difficult for individuals to process information and perform daily activities. It may also result in behavioural problems, such as attention problems, learning difficulties, and difficulty interacting with others (Hasken et al., 2023; Hur et al., 2022). Vorgias et al. (2023) noted that FASD is often associated with central nervous system dysfunctions that manifest early in life, causing symptoms such as irritability and delays in development. According to Hanlon-Dearman and Longstaffe (2023), these cognitive challenges lead to poor coordination, academic underachievement, and deficits in executive functioning during adolescence. Furthermore, individuals with FASD may have comorbid conditions such as vision and hearing problems, exacerbating their difficulties and diminishing their quality of life (Popova et al., 2023).

3.3.2 Neurological and behavioural effects

Siqueira and Stipursky (2022) reported that prenatal alcohol exposure significantly disrupts the central nervous system, particularly the brain and spinal cord. These neurological disruptions affect synapse formation and brain connectivity, which are crucial for cognitive functioning (Olson et al., 2023). The behavioural consequences are equally severe, with individuals often exhibiting cognitive deficits, impulsivity, and psychiatric conditions such as depression, anxiety, and mood disorders

(Rubin et al., 2023). These mental health challenges require long-term intervention to mitigate their effects on well-being and social functioning (Clark et al., 2024).

3.3.3 Socioeconomic implications and increased mortality risk

FASD imposes substantial financial and social burdens on families and society. The intersection of poverty, unemployment, and limited access to healthcare complicates the experience and management of FASD in South Africa. Popova et al. (2023) reported that many caregivers must reduce their work hours or leave employment entirely to provide care for individuals with FASD, thereby destabilising their families' incomes. This burden extends to the community, as FASD creates significant pressures on healthcare, education, and social support systems. De Jong et al. (2021) highlight that children with FASD often require regular medical attention, specialised educational resources, and long-term care. Clinics in disadvantaged South African communities frequently lack the resources necessary for effective FASD diagnosis and management (Adebiyi & Mukumbang, 2022).

Moreover, FASD is associated with an increased risk of premature death. The average age of death for individuals with FASD is 34, with a mortality rate five times higher than that of unaffected individuals (Popova et al., 2023). Many of these deaths occur in early adulthood, and siblings and mothers of affected individuals also experience elevated risks (Oh et al., 2020).

4. Conclusion And Recommendations

This study identifies and discusses the factors enabling alcohol consumption during pregnancy in South Africa. An interplay of social and socioeconomic enablers influences alcohol consumption during pregnancy. Critical enablers, such as unplanned pregnancies, intimate partner violence, mental health issues, and socioeconomic challenges, continue to contribute to the prevalence of FASD across communities. Despite existing knowledge of the devastating effects—ranging from physical and neurological impairments to far-reaching socio-economic consequences—limited resources, knowledge gaps, and insufficient support mechanisms impede prevention and timely intervention.

A targeted public health campaign is essential to reduce FASD prevalence in South Africa. For broader community support, culturally sensitive messaging that addresses at-risk groups, especially in rural communities, is imperative. The aim is to ensure that the appropriate information about the risks of drinking during pregnancy is conveyed in a sensitive, understandable, and relatable manner. Improving early screening and diagnostic services in rural areas is also crucial. Equipping clinics in rural communities with resources for continuous care will ensure that affected children receive timely interventions and mitigate long-term impacts.

Trauma-informed care should be integrated into FASD prevention for mothers facing socio-economic challenges and emotional trauma. Including mental health support for both mothers and family members will address the underlying factors contributing to alcohol use during pregnancy within households. Community education programmes should engage community leaders to deliver accessible information. Reducing stigma in healthcare by adopting non-judgmental approaches will encourage pregnant women to seek necessary care and support.

The scoping review methodology and timeframe (2020-2024) implemented in this study focus on understanding and providing comprehensive insight into the enablers of alcohol consumption during pregnancy. It is imperative to note that this approach excludes older research and grey literature. Furthermore, the argument presented has not contextualised crucial historical insights into FASD in South Africa, as that was outside its scope. Consequently, the interpretation of study findings should take into account these limitations—aim, scope, and timeframe. The analysis of alcohol consumption needs to consider the rapidly changing socio-economic conditions that influence women's experiences of drinking alcohol during pregnancy.

5. Declarations

Authors contributions: Conceptualisation (O.J.A. & M.J.); Literature review (O.J.A. & M.J); methodology (O.J.A.); software (N/A); validation (O.J.A. & M.J.); formal analysis (O.J.A. & M.J.); investigation (O.J.A. & M.J.); data curation (N/A) drafting and preparation (O.J.A. & M.J.); review and editing (O.J.A. & M.J.); supervision (N/A); project administration (O.J.A.); funding acquisition (N/A). All authors have read and approved the published version of the article.

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